

C3 39. (Amended) The electrode structure as claimed in claim 38, wherein at least one of said electrode-side heat transfer space, and said chuck-side heat transfer space is provided with a heat resistant pressure sensor, and an amount of gas supplied by said corresponding heat transfer gas supply means is controlled based on an output of the heat resistant pressure sensor.

*See the attached Appendix for the changes made to effect the above-amended claims.*

Please add the following new claim:

C4 46. (New) An electrode structure used in a plasma processing apparatus which performs a predetermined process on an object to be processed by using a plasma in a process chamber in which a vacuum can be formed, the electrode structure comprising:  
an electrode unit having a heater unit therein;  
a cooling block joined to the electrode unit and having a cooling jacket which cools said electrode unit;  
a labyrinth heat transfer space formed of a groove provided on at least two adjoining surfaces; and  
electrode-side heat transfer gas supply means for supplying a heat transfer gas to said labyrinth heat transfer space. --